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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/729,943	12/06/2000	Hideo Yahagi	108066	6925

7590

11/07/2005

Oliff & Berridge PLC
P. O. Box 19928
Alexandria, VA 22320

EXAMINER

TRAN, HIEN THI

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 11/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/729,943

Applicant(s)

YAHAGI, HIDEO

Examiner

Hien Tran

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4 and 6-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4, 6-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-2, 4, 6-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, in claim 1, lines 9-25 it is unclear as to where such is disclosed in the original specification that "said catalyst substance forming a region ... said low resistance region provides a lower gas flow resistance that in said catalyst substance, and said low resistance region is disposed within said catalyst substance to produce a higher flow velocity of the exhaust gas than through said catalyst substance". See claim 2 likewise.

Also in claim 2, lines 23-26 the newly added limitation is nowhere disclosed in the specification.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-2, 4, 6-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1764

In claim 1, lines 9-25 it is unclear as to what structural limitation applicants are attempting to recite; in lines 9-25 it is unclear as to what is intended by "...said catalyst substance forming a region ... said low resistance region provides a lower gas flow resistance that in said catalyst substance, and said low resistance region is disposed within said catalyst substance to produce a higher flow velocity of the exhaust gas than through said catalyst substance ..."; in line 10 it is unclear as to what is implied by "a front face" and "a rear face", it is unclear as to whether applicant intends to recite the "front face" and "rear faces" of said catalyst substance or of the catalyst support, does the catalyst substance have faces. See claim 2 likewise.

In claim 2, lines 23-26 it is unclear as to what structural limitation applicant is attempting to recite.

In claim 6, it is unclear as to what applicant is attempting to recite, it is unclear as to how any portion of the catalyst support can be disposed upstream of the notch portion since the notch portion is disposed at least at the front face of the catalyst support. Also it is unclear as to where it is disclosed in the specification.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, 7, 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Foster (5,857,140).

Art Unit: 1764

With respect to claims 1, 2, Foster discloses an exhaust emission control system comprising:

an internal combustion engine (see, for example, col. 1, lines 1-2; col. 4, lines 38-39);
an exhaust gas purifying catalyst provided in an exhaust passageway of said internal combustion engine; the catalyst including: a box body 12 formed with an exhaust gas inlet and an outlet; a catalyst support 18 incorporated into said box body; and a catalyst substance supported on said catalyst support 18; wherein a part of said catalyst support is a low resistance region extending from a part of the front face to a part of the rear face of the support; said low resistance region having passages with shorter length and therefore inherently providing a lower gas flow resistance and higher gas flow velocity than in other areas of the support; said low resistance region including a notch portion that is recessed from said front face of the support; said notch portion extending from said front face to a position between the front face and the rear face (see, for example, col. 2, lines 38-45; col. 4, lines 8-61; col. 8, lines 20-30).

Foster further discloses that the notched portion is formed in an exhaust gas inflow sided end and in an exhaust gas outflow sided end.

With respect to the newly added limitation in claims 1-2, as discussed in the 112 rejection above, the newly added limitation introduces new matter. Therefore, the difference between applicant's claimed region and that of the prior art cannot be identified by the specification of the instant application. As best understood, since a portion of the catalyst support in Foster is recessed from a face of the catalyst support, such region inherently forms a low resistance area with a low gas flow resistance and higher flow velocity and therefore meets the instant claims.

With respect to claim 7, Foster discloses provision of a plurality of notched portions (Fig. 18).

With respect to claims 9-10, Foster discloses that the notched portion includes a guide passageway inclined or conical shape (Figs. 8,17).

Instant claims 1-2, 7, 9-10 structurally read on the apparatus of Foster.

7. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 07-232082.

With respect to claims 1-2, JP 07-232082 discloses an exhaust emission control system comprising:

an internal combustion engine (see, for example, claim 1, paragraph 0001);

an exhaust gas purifying catalyst provided in an exhaust passageway of said internal combustion engine; the catalyst including: a box body 30 formed with an exhaust gas inlet and an outlet; a catalyst support 10 incorporated into said box body; and a catalyst substance supported on said catalyst support 10; wherein a part of said catalyst support 10 is a low resistance area or notch portion 12 formed so that a gas flow resistance is inherently lower than in other areas and disposed in such a position that a flow velocity of the exhaust gas flowing to said catalyst support is high (abstract).

With respect to the newly added limitation in claims 1-2, as discussed in the 112 rejection above, the newly added limitation introduces new matter. Therefore, the difference between applicant's claimed region and that of the prior art cannot be identified by the specification of the instant application. As best understood, since a portion of the catalyst support in JP 07-232082 is recessed from a face of the catalyst support, such region inherently forms a low resistance area with a low gas flow resistance and therefore meets the instant claims.

Art Unit: 1764

Instant claims 1-2 structurally read on the apparatus of JP 07-232082.

8. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 1-119820.

With respect to claims 1-2, JP 1-119820 discloses an exhaust emission control system comprising:

an internal combustion engine;

an exhaust gas purifying catalyst provided in an exhaust passageway of said internal combustion engine; the catalyst including: a box body 8 formed with an exhaust gas inlet and an outlet; a catalyst support 1 incorporated into said box body; and a catalyst substance supported on said catalyst support 1; wherein a part of said catalyst support 1 is a low resistance area or notch portion 2 formed so that a gas flow resistance is inherently lower than in other areas (claim).

With respect to the newly added limitation in claims 1-2, as discussed in the 112 rejection above, the newly added limitation introduces new matter. Therefore, the difference between applicant's claimed region and that of the prior art cannot be identified by the specification of the instant application. As best understood, since a portion of the catalyst support in JP 1-119820 is recessed from a face of the catalyst support, such region inherently forms a low resistance area with a low gas flow resistance and therefore meets the instant claims.

Instant claims 1-2 structurally read on the apparatus of JP 1-119820.

9. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 61-66610.

With respect to claims 1-2, JP 61-66610 discloses an exhaust emission control system comprising:

an internal combustion engine;

Art Unit: 1764

an exhaust gas purifying catalyst provided in an exhaust passageway of said internal combustion engine; the catalyst including: a box body 1a formed with an exhaust gas inlet and an outlet; a catalyst support 2 incorporated into said box body; and a catalyst substance supported on said catalyst support 2; wherein a part of said catalyst support 2 is a low resistance area or notch portion 5 formed so that a gas flow resistance is inherently lower than in other areas (abstract).

With respect to the newly added limitation in claims 1-2, as discussed in the 112 rejection above, the newly added limitation introduces new matter. Therefore, the difference between applicant's claimed region and that of the prior art cannot be identified by the specification of the instant application. As best understood, since a portion of the catalyst support in JP 61-66610 is recessed from a face of the catalyst support, such region inherently forms a low resistance area with a low gas flow resistance and therefore meets the instant claims.

Instant claims 1-2 structurally read on the apparatus of JP 61-66610.

10. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 10-231722.

With respect to claims 1-2, JP 10-231722 discloses an exhaust emission control system comprising:

an internal combustion engine;

an exhaust gas purifying catalyst provided in an exhaust passageway of said internal combustion engine; the catalyst including: a box body 2e formed with an exhaust gas inlet and an outlet; a catalyst support 3 incorporated into said box body; and a catalyst substance supported on said catalyst support 3; wherein a part of said catalyst support 3 is a low resistance area or notch portion 3a formed so that a gas flow resistance is lower than in other areas.

Art Unit: 1764

With respect to the newly added limitation in claims 1-2, as discussed in the 112 rejection above, the newly added limitation introduces new matter. Therefore, the difference between applicant's claimed region and that of the prior art cannot be identified by the specification of the instant application. As best understood, since a portion of the catalyst support in JP 10-231722 is recessed from a face of the catalyst support, such region inherently forms a low resistance area with a low gas flow resistance and therefore meets the instant claims.

Instant claims 1-2 structurally read on the apparatus of JP 10-231722.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. The art area applicable to the instant invention is that of catalytic converter.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by

Art Unit: 1764

applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re Clinton* 188 USPQ 365, 367 (CCPA 1976) and *In re Thompson* 192 USPQ 275, 277 (CCPA 1976).

14. Claims 4, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster (5,857,140).

With respect to claims 4, 6, selecting an appropriate amount of catalyst loading for each portion of the substrate is within the purview of one having ordinary skill in the art during routine experimentation and optimization of the system, absence showing any unexpected results thereof.

With respect to claim 8, since the shape of the end face of the catalyst substrate (shape of the notched portion) is not considered to confer patentability to the claim. It would have been an obvious matter of design choice to select an appropriate shape for the end face of the catalyst substrate/shape of the notched portion, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art, absence showing any unexpected results. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

15. Claims 2, 4, 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over either JP 07-232082, JP 1-119820, JP 61-66610 or JP 10-231722 in view of Foster (5,857,140).

The same comments regarding to Foster apply.

It would have been obvious to one having ordinary skill in the art to select notched portions (shape, number, location, etc.) as taught by Foster in the apparatus of JP 07-232082, JP 1-119820, JP 61-66610 or JP 10-231722, since such a modification would have involved a mere change in the shape of a component or rearrange the notched portion. A change in shape is generally recognized as being within the level of ordinary skill in the art, absence showing any unexpected results. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Note that it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Response to Arguments

16. Applicant's arguments filed 08/24/05 have been fully considered but they are not persuasive.

Applicant argues the recessed inlet 48 in the catalyst substance 46 of Forster is used to prevent the exhaust gas from flowing directly into the mat 24 so as to improve its durability while the claimed features of the instant invention are directed to a low resistance region through which exhaust gas passes extending through the catalyst substance. Such contention is not persuasive since the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Applicant argues that in the invention, a heat spot is formed from the flow through the low resistance area that Foster lacks. Such contention is not persuasive as the language of the

Art Unit: 1764

instant claims is not commensurate in scope with such argument. Even if it is, since the apparatus of Foster is the same as that of the instant claims, it inherently possesses such properties thereof.

Applicant argues that Houdaira lacks any corresponding configuration to a low resistance region to produce a higher flow velocity as provided in the instant claims. Such contention is not persuasive as Houdaira discloses all of the structural elements set forth in the instant claims and therefore the apparatus of Houdaira inherently possesses the same properties thereof (e.g. Houdaira discloses a catalyst support 10 having recess 12. The distance from the inlet face to the outlet face in said recess area is shortened and therefore the gas flow resistance in said area is inherently decreased).

Applicant argues that Houdaira requires the gas to flow through the first carrier 10 and a high density material 16 along the outer rim of the recess region 12. Such contention is not persuasive as the phrase "comprising" opens the instant claims to the inclusion of such.

Applicant argues that Nakagawa and Kajima lack a suggestion of a low resistance region within the catalyst substance extending through the catalyst as recited in instant claims. Such contention is not persuasive as Nakagawa and Kajima disclose all of the structural elements set forth in the instant claims and therefore the apparatus of Nakagawa and Kajima inherently possesses the same properties thereof.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

Art Unit: 1764

USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, the apparatus of the primary references discloses all of the structural elements set forth in the instant claimed, except for the specific shape of the notched portion.

It would have been obvious to one having ordinary skill in the art to select notched portions (shape, number, location, etc.) as taught by Foster in the apparatus of JP 07-232082, JP 1-119820, JP 61-66610 or JP 10-231722, since such a modification would have involved a mere change in the shape of a component or rearrange the notched portion. A change in shape is generally recognized as being within the level of ordinary skill in the art, absence showing any unexpected results. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Note that it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 1764

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

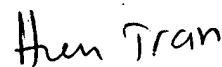
Gary, Abe et al, and Sigling are cited for showing state of the art.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1454. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HT
November 3, 2005



Hien Tran
Primary Examiner
Art Unit 1764